

**What is claimed is:**

1. A method comprising:  
modeling in a common representation network element  
commands, events and data from a plurality of sources;  
5 translating data represented in a first modeling language  
to data represented in a second modeling language;  
storing the data in the second modeling language in a  
global data model repository; and  
automatically generating code to support external  
10 management interface based on the stored data in the global  
repository.

2. The method of claim 1 further comprising  
automatically generating system documentation based on the  
15 stored data.

3. The method of claim 2 wherein the generated system  
documentation corresponds to a code generated implementation.

20 4. The method of claim 1 wherein the first language is  
structured management information (SMI).

5. The method of claim 1 wherein the second language is  
extensible markup language (XML).

6. The method of claim 1 wherein automatically  
generating code for the external interface includes  
automatically generating code in implementation of a command  
5 line interface (CLI).

7. The method of claim 1 wherein automatically  
generating code for the external interface includes  
automatically generating code in implementation of a an  
10 Extensible Markup Language interface.

8. The method of claim 1 wherein automatically  
generating code for the external interface includes  
automatically generating code in implementation of a Simple  
15 Network Management Protocol interface.

9. The method of claim 1 wherein automatically  
generating code for the external interface includes  
automatically generating code in implementation of a  
20 configuration database.

10. The method of claim 1 wherein automatically  
generating code for the external interface includes

automatically generating code in implementation of Simple  
Network Management Protocol subagents.

11. The method of claim 1 wherein automatically  
5 generating code for the external interface includes  
automatically generating code to assist in implementation of  
an Application Program Interface.

12. The method of claim 1 wherein modeling operational  
10 system data from a plurality of sources includes modeling run-  
time system data from a plurality of sources using at least  
one of the first language and the second language.

13. A system comprising:  
15 a global repository;  
an interface to a plurality of sources; and  
an interface to an external interface, with  
the global repository is configured to:  
model in a common representation network element  
20 commands, events and data from a plurality of sources;  
translate data represented in a first modeling language  
to data represented in a second modeling language;  
for store the data in the second modeling language in  
the global data model repository; and

automatically generate code to support external management interface code development based on the stored data in the global repository.

5        14. The system of claim 13 further configured to automatically generate system documentation based on the stored data.

10       15. The system of claim 14 wherein the generated system documentation corresponds to a code generated implementation.

16. The method of claim 13 wherein the first language is structured management information (SMI).

15       17. The method of claim 13 wherein the second language is extensible markup language (XML).

18. The method of claim 13 wherein the global repository is further configured to model operational system data from a plurality of sources using at least one of the first language and the second language.

19. A computer program product, tangibly embodied in an information carrier, for executing instructions on a

processor, the computer program product being operable to cause a machine to:

model in a common representation network element commands, events and data from a plurality of sources;

5       translate data represented in a first modeling language to data represented in a second modeling language;

store the data in the second modeling language in a global data model repository; and

automatically generate code to support external  
10 management interface code development based on the stored data in the global repository.

20. The computer program product of claim 19 further configured to automatically generate system documentation  
15 based on the stored data.

21. The computer program product of claim 20 wherein the generated system documentation corresponds to a code generated implementation.

20

22. The computer program product of claim 19 wherein the first language is structured management information (SMI).

23. The computer program product of claim 19 wherein the second language is extensible markup language (XML).

24. The computer program product of claim 19 wherein the  
5 global repository is further configured to model operational system data from a plurality of sources using at least one of the first language and the second language.

25. The computer program product of claim 19 wherein the  
10 instructions to cause a machine to automatically generate code for the external interface include instructions to cause a machine to automatically generate code implementat a command line interface (CLI).

15 26. The computer program product of claim 19 wherein the instructions to cause a machine to automatically generate code for the external interface include instructions to cause a machine to automatically generate code to implementata configuration database.

20

27. The computer program product of claim 19 wherein the instructions to cause a machine to automatically generate code for the external interface include instructions to cause a

machine to automatically generate code to implement SNMP  
subagents.

28. The computer program product of claim 19 wherein the  
5 instructions to cause a machine to automatically generate code  
for the external interface include instructions to cause a  
machine to automatically generating code implement an API.

29. The computer program product of claim 19 wherein the  
10 instructions to cause a machine to model operational system  
data from a plurality of sources include instructions to cause  
a machine to modeling operational system data from a plurality  
of sources using at least one of the first language and the  
second language.

15